

NATIONAL AIR INTELLIGENCE CENTER



READER'S COLUMN



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READER'S COLUMN

Huang Zhengfu of Shanghai's First Copper Pipe Plant: Your publication is one of the technical publications to which I have subscribed for some time. I am very interested in your articles which introduce new electronics technology as well as other articles. The articles are quite good and in-depth. Your publication is aimed at mid-level technical personnel. Mid-level technical personnel are mostly production and scientific research cadre. They urgently need all sorts of practical information such as model numbers, capabilities, footnotes and technical parameters of various new types of integrated circuitry, 96 series single-chip computers and sensors. I hope that you can introduce this sort of information in your publication.

Ren Chengzhi of the Commission for Science and Industry in National Defense in Beijing. I would like your publication to introduce some applications of electronic technology in the field of medicine such as medical electronics instruments, medical plotting devices and biological signal detectors.

Jiang Wei of the Household Appliance Repair Center, Huzhou, Zhiang: When repairing electrical appliances, one should understand the proper use of instruments and gauges. Your publication has very few articles of this nature. I wish that

you would publish more.

Chen Jinke of the Broadcast Television Bureau in Shanggao County, Jiangxi: I have also encountered a malfunction similar to the one described in the first question in the "QUESTIONS AND ANSWERS" column in your March Issue. My analysis at that time was that perhaps the problem was caused by a weak control signal. I tried cleaning the control head, and within a few minutes, this problem disappeared. I would like to ask if there is some sort of connection between the control signal and the control head.

We asked Comrade Yu Hexiang about this letter from Comrade Chen Jinke, and his answer is as follows:

In the SL-C30CH video camera, during recording, the control signal splits the frequencies of the field synchronous signal, and then the control head records this on a magnetic tape. During replay, the same head picks up these signals for use by the main axial servo for phase comparison signals. Therefore, the control signal and head are closely connected. If the control signal is weak or disappears, then during replay, there will be problems with the main axial phase control. Therefore, when using that machine to replay tapes it has recorded or those recorded by other cameras, tracking will be impossible, and it will not operate normally. Your problem is not exactly the same as the problem in question number one in the March Issue.

SHANGHAI'S JIAOTONG UNIVERSITY SUCCESSFULLY DEVELOPS LSI/VLSI DESIGN VERIFICATION TEST SYSTEM

The LSI Laboratory of Jiaotong University's College of Electronics and Electrical Engineering has used some of the most advanced theories and calculations in the world to successfully develop a large scale integrated circuit (LSI)/very large scale integrated circuits (VLSI) computer-aided design verification and

test system, providing a complete practical CAD tool for various stages of the design of various MOS and ECL technology LSI/VLSI chips. Customers claim that this system has excellent capabilities and is easy to operate. Experts and users are of the opinion that this is China's first highly automated, practical commercial total system for the design, verification, and testing of LSI/VLSI.

This system is composed of an automatic design subsystem, an automatic verification subsystem, and an automatic test subsystem. These three subsystems are connected through means of a CAD data bank, forming an integrated VLSI-CAD system. The data in the running program is described in a uniform data format, allowing design, verification and testing to be carried out on the same system. The data bank includes logical function descriptions, logical symbol description, blueprint symbol description and blueprint description of dozens of ordinary logic elements. It has a 300- to 1,000-gate CMOS and ECL gate array motherboard. During automated design it is possible to use graphics entry or descriptive language entry to automatically perform circuit simulation, logic simulation, gate array blueprint design and automatic wiring or man-machine interface wiring. The design system is not related to technical procedures, and by rewriting the technical procedure explanations, it can achieve the technical procedures of 3-micrometer and 5-micrometer blueprints. It is very adaptable.

The automatic verification system can also achieve blueprint/circuit retrieval and blueprint geometric design regulation check, including graphic logical computation and graphics geometric computation. Not only can it process orthogonal graphics, it can also process non-orthogonal graphics and even simple arcs and curves. The hardware environment for this system is the VAX-11/750 and Applicon microcomputer system. These each have their own externals and work stations such as

plotters, digitizers, graphics terminal and tape backup. The software environment is VMB and RSX operating systems. All application software is written in C language. To expand applications, this system has already been ported to Apollo, HP and AT computer systems.

(Draft submitted by Lao Chengxin).

A brand new type of luminous electronic material which can maintain luminosity for several hours was developed by the Shanghai Electronic Vacuum Laboratory. It recently passed technical evaluation. This material is made of luminous powders and fillers through a thermocompression process. It is non-toxic, not dangerous, non-radioactive, and it is anti-magnetic. Testing at the Shanghai Testing Technical Institute demonstrated that this material could maintain a light level visible to the human eye ($>1\times10^{-4}\text{cd/m}^2$) for more than 7h, comparable to similar foreign products. This type of material can be used to make indicators for keys, buttons or cases for electronic products. It can also be used for such products such as coding, boxes, key tags, electronic toys, packaging and technical products. (Xu Chengdu).

The YWCL-33 model acoustic wave extension line was developed by Institute Number 26 of the Ministry of Electronics Industry. This extension line can be used for fixed extensions or processing of the UHF to X-ray band. It can be used to replace coaxial or waveguide electromagnetic extension lines to reduce weight and space.

Acousto-optical converters are necessary components of laser printers, laser faxes, laser cameras, high-speed laser recorders, acousto-optical spectrum analyzers and various types of systems for high-speed reading and writing of graphics and character information. The acousto-optical converter developed by Institute Number 20 of the Ministry of Electronics Industry is

made of superior quality tellurium dioxide monocrystal. It possesses such characteristics as wide bandwidth, high diffraction rate and moderate resolution and speed.

(Draft submitted by Lai Daoqin).

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